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10/697,103	10/31/2003	Steven A. Rogers	006389.00004	9000

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BANNER & WITCOFF, LTD.
1100 13th STREET, N.W.
SUITE 1200
WASHINGTON, DC 20005-4051

EXAMINER	
SCHEIBEL, ROBERT C	
ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/697,103	ROGERS, STEVEN A.	
	Examiner	Art Unit	
	Robert C. Scheibel	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/03,8/05,7/06,2/07,3/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 15, 21, and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim **21**, the subject matter of this claim is drawn to functional descriptive matter (software) that has not been functionally embodied in a computer readable medium. The body of the claim merely states the steps performed by the software. Please refer to pages 52-54 of the "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" for more detail. To overcome this rejection, the claim should be reworded to state "A computer readable medium having stored therein executable instructions which when executed perform the following steps:".

Regarding claim **15**, the subject matter is drawn to a method which performs the identical steps of claim 21 which as indicated above, pertain to software which is not functionally embodied in a computer readable medium. Claim 15 is rejected by virtue of the evidence in claim 21 that these steps are merely software instructions and are thus non-statutory subject matter.

Regarding claim **26**, this claim includes the phrase "computer-implemented steps" which indicates that the body of the claim is drawn to functional descriptive matter (software) that has not been functionally embodied in a computer readable medium. The body of the claim merely states the steps performed by the software. Please refer to pages 52-54 of the "Interim

Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" for more detail. To overcome this rejection, the phrase "computer-implemented steps" should be removed from the claim.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims **1, 10, 15, and 21** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 6, and 19 of copending Application No. 11/233,144. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons.

Regarding claim **1**, claim 1 of copending Application No. 11/233,144 discloses: step 1 of claim 1 in that the scheduling request is a query; step 2 of claim 1 in steps 2 and 3 (the evaluating

step discloses that the response indicates which timeslots would not conflict with other transmitters); step 4 in step 4.

Similarly, regarding claim **10**, claim 4 discloses step 1 in step 1 of claim 1 as modified by the limitation of claim 4; step 2 in steps 2 and 3 of claim 1; step 4 in step 4 of claim 1.

Similarly, regarding claim **15**, claim 6 discloses step 1 in step 1 of claim 1 as modified by the limitation of claims 5 and 6; step 2 in steps 2 and 3 of claim 1; step 4 in step 4 of claim 1.

Similarly, regarding claim **21**, claim 19 discloses step 1 in step 1 of claim 14 as modified by the limitation of claims 18 and 19; step 2 in steps 2 and 3 of claim 14; step 4 in step 4 of claim 14.

However, copending Application No. 11/233,144 does not disclose the limitation of step 3 of claim 1 or the limitation that the packets are transmitted in steps 2 of claims 10, 15, and 21 that the response indicates time slots during which the transmission would not conflict with other transmitters, or whether the proposed schedule is acceptable. However, at the time of the invention, it would have been obvious to one of ordinary skill in the art to transmit a proposed transmission map (as suggested in claim 5) after the response to the query is received for the benefit of notifying the destination when to expect packet transmission. It would also have been obvious to one of ordinary skill in the art to include a transmission map indicating which time slots would not conflict with other transmitters as this would allow the implementation of the evaluating step 3 to be very simple in that it would merely need to decode the transmission map received in the response.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims **1-5 and 7-26** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,611,519 to Howe.

Regarding claim **1**, Howe discloses a method of transmitting packets over a computer network, comprising the steps of: (1) from a transmitting node (originating edge node in Figure 43; see also Figure 35), transmitting a query (call setup layer 1 request) to an intended receiving node (terminating edge node of Figure 43); (2) receiving from the intended receiving node a reception map (the responses generated in modes 2 or 3 of Figure 36) indicating time slots during which transmission to the intended receiving node would not conflict with other transmitters (the next best time and delayed times of these steps are time slots which do not conflict with the existing schedule); (3) from the transmitting node, transmitting a proposed transmission map indicating time slots, compatible with the reception map, during which the transmitting node intends to transmit packets (the response to the proposed change in reject modes 2 and 3; see steps 4 and 5 in columns 10 and 11); and (4) from the transmitting node, transmitting packets to the intended receiving node according to the proposed transmission map (disclosed throughout – consider lines 37-42 of column 4, for example).

Regarding claim **10**, Howe discloses a method of transmitting packets over a computer network, comprising the steps of: (1) from a transmitting node (originating edge node in Figure 43; see also Figure 35), transmitting a bandwidth requirement to an intended receiving node (the call setup layer 1 request; this includes a bandwidth requirement (desired bit rate, packets per second, etc.) as shown in Figure 42); (2) receiving from the intended receiving node a transmission map indicating time slots during which transmission to the intended receiving node would not conflict with other transmitters (the next best time and delayed times of these steps are time slots which do not conflict with the existing schedule); and (3) from the transmitting node, transmitting packets to the intended receiving node according to the transmission map (disclosed throughout – consider lines 37-42 of column 4, for example).

Regarding claims **15 and 21**, Howe discloses a method of transmitting packets over a computer network, comprising the steps of: (1) from a transmitting node (originating edge node in Figure 43; see also Figure 35), transmitting a proposed delivery schedule to an intended receiving node (call setup layer 1 request), wherein the proposed delivery schedule indicates time slots corresponding to times during which the transmitting node proposes to transmit packets to the intended receiving node (as shown in Figure 42, this request indicates the time slots during which the originating edge node intends to transmit in the desired start time and the periodic interval parameters); (2) receiving from the intended receiving node an indication as to whether the proposed delivery schedule is acceptable to the intended receiving node (the responses "session established" of Figure 43 and "accept message" of Figure 35); and (3) if the proposed delivery schedule is acceptable, transmitting packets to the intended receiving node according to

the proposed delivery schedule (disclosed throughout – consider lines 37-42 of column 4, for example).

Regarding claim **26**, Howe discloses a method of transmitting packets over an Ethernet, comprising the computer-implemented steps of: (1) from a transmitting node (originating edge node in Figure 43; see also Figure 35), transmitting a query (call setup layer 1 request) to an intended receiving node (terminating edge node of Figure 43); (2) at the intended receiving node, generating a reception map indicating which of a plurality of discrete time slots have been previously allocated for transmission of packets to that intended receiving node (see the schedule of Figure 37; this schedule is a map of previously allocated time slots and is generated at the intended receiving node), wherein each time slot represents a unit of time within a transmission interval over the Ethernet (see lines 4-13 of column 9 which shows that this method applies to an Ethernet in one embodiment); (3) transmitting the reception map from the intended receiving node to the transmitting node (see lines 50-52 of column 10 and lines 9-16 of column 11 which indicates that the intended receiving node transmits suggested changes to the original schedule back to the transmitting node when the original proposal is not acceptable); (4) from the transmitting node, transmitting to the intended receiving node a proposed transmission map indicating time slots, compatible with the reception map, during which the transmitting node intends to transmit packets to the intended receiving node over the Ethernet (the initial call setup layer 1 request as well as follow up setup messages required in the negotiation described in lines 48-58 of column 10); (5) from the transmitting node, transmitting packets to the intended receiving node according to the proposed transmission map (disclosed throughout – consider lines 37-42 of column 4, for example); and (6) maintaining time synchronization as to the

discrete time slots between the transmitting node and the receiving node through the use of an electrical connection that is separate and apart from any network connection between the transmitting node and the intended receiving node (see the master clock and GPS signals of figures 1 and 2, for example).

Regarding claim **2**, Howe discloses the limitation of prior to step (4), receiving an agreement from the intended receiving node and, if no agreement is received, transmitting in step (4) according to an alternative transmission map (see the Accept message in the right-most "yes" branch of Figure 35 as well as the Accept message in Figure 43 if agreement is received; see the reject modes B and C of Figure 36 which determine an alternative transmission map using the next best time when no agreement is reached).

Regarding claim **3**, Howe discloses the limitation that the alternative transmission map is proposed by the intended receiving node in the reject mode B of Figure 36, for example.

Regarding claim **4**, Howe discloses the limitation of repeatedly transmitting packets to the intended receiving node according to the proposed transmission map throughout; consider the parameter "periodic interval" of Figure 42 which clearly indicates that packets will be repeatedly transmitted according to this schedule.

Regarding claim **5**, Howe discloses the limitation of at the intended receiving node, generating the reception map on the basis of previously allocated time slots from other transmitting nodes (see Figures 35 and 36 which clearly indicate that the existing schedule is used in determining whether the proposed schedule is acceptable).

Regarding claims **7, 12, 18, and 23**, Howe discloses the limitation of further comprising the step of periodically synchronizing, as between the transmitting node and the receiving node, a time period on which the proposed transmission map is used in step (4) in Figure 41.

Regarding claims **8, 13, 19, and 24**, Howe discloses the limitation that the synchronizing step comprises the step of using an electrical connection over which a synchronization signal is transmitted, separate and apart from any network connection (see the GPS signals and master clock of Figures 1 and 2 and the first step of Figure 41.)

Regarding claims **9, 14, 20, and 25**, Howe discloses the limitation that the synchronizing step comprises the step of transmitting synchronization packets over the network (the master pulse of Figure 41).

Regarding claim **11**, Howe discloses the limitation of further comprising the step of, at the intended receiving node, generating the transmission map based on the bandwidth requirement transmitted from the transmitting node (the schedule (transmission map) of Figure 37 is generated based on the bandwidth requirement which is sent in the setup message of Figure 42 (desired bit rate, packets per second, etc.)).

Regarding claims **16 and 22**, Howe discloses the limitation of further comprising the step of, upon determining that the proposed delivery schedule is not acceptable to the intended receiving node, receiving from the intended receiving node an alternate delivery schedule and using the alternate delivery schedule to transmit the packets in step (3) in the reject mode 2 of Figure 36 which sends the next best time.

Regarding claim **17**, Howe discloses the limitation of further comprising the step of, at the intended receiving node, determining whether the proposed delivery schedule is acceptable

by comparing time slots proposed to be used by the transmitting node to previously allocated time slots allocated by other transmitters (see the check of whether the requested times are available in figure 35 and lines 39-48 of column 10).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim **6** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,611,519 to Howe in view of U.S. Patent 6,657,959 to Chong et al.

Howe discloses all limitations of parent claim 5 as indicated in the rejection under 35 U.S.C. 102(e) above. However, Howe does not disclose expressly the limitation that the reception map is a bitmap with each bit corresponding to one of a plurality of timeslots, each bit indicating whether that corresponding timeslot has previously been allocated. However, the

bitmap is a well-known data structure which represents data in a more compressed format than a table. For example, Chong discloses the use of a bitmap in the abstract. Lines 11-15 indicate the use of an ACR bitmap as a compressed form of AST table information on whether a particular timeslot is occupied or not.

Howe and Chong are analogous art because they are from same field of endeavor of scheduling communications channels. At the time of the invention it would have been obvious to a person of ordinary skill in the art to represent the timeslot availability in the schedule of Figure 37 of Howe by using a bitmap. The motivation for doing so would have been to compress this information and thus allow faster access as well as require less bandwidth to transmit this information to another node. Therefore, it would have been obvious to combine Chong with Howe for the benefit of compressing the table information to obtain the invention as specified in claim 6.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent 6,628,629 to Jorgensen discloses a reservation based prioritization method for wireless transmission of latency and jitter sensitive IP-flows.
- U.S. Patent 6,973,067 to Haartsen discloses a multi-media protocol for slot-based communication systems.
- U.S. Patent 6,330,236 to Ofek et al discloses a packet switching method with time-based routing.

- U.S. Patent Application Publication 2005/0058137 to Carlson et al disclose scheduling packet transmissions.
- U.S. Patent 6,788,702 to Garcia-Luna-Aceves et al discloses a protocol for neighborhood-established transmission scheduling.
- U.S. Patent 6,353,618 to Hung et al discloses a method for controlling traffic flows in a packet-switched network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 7:00-5:30 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCS 4-9-07

Robert C. Scheibel
Patent Examiner
Art Unit 2616

Seema S. Rao 4/11/07
SEEMA S. RAO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600